

Appl. No. 09/804,522

Amnt. dated 9/26/05

Reply to Office Action of Apr 27, 2005

REMARKS/ARGUMENTS

Claims 1-26 remain in the application. Claims 1, 7, 11 and 14 are currently amended. Claim 5 was previously amended. Claims 21-26 have been added.

Claims 1-2, 6-8, and 13 were rejected under 35 USC 103(a) as unpatentable over Maekawa et al 5,644,388 and McDermott 5,898,267. Claims 4, 10-11, 14, 18, and 20 are rejected under 35 USC 103(a) as unpatentable over Maekawa et al., McDermott, and Martin et al. 4,573,796. Claims 15 and 17 are rejected under 35 USC 103(a) as unpatentable over Maekawa et al., McDermott, and Martin et al. Claims 3, 9, and 19 are rejected under 35 USC 103(a) as unpatentable over Maekawa et al., McDermott, and Martin et al. Claim 5 is rejected under 35 USC 103(a) as unpatentable over Maekawa et al., McDermott, and Ross et al. 5,877,863.

Amended Claims

The independent claims 1, 7, 11 and 14, as now amended, clarify in the present invention fluorescent light resulting from the LED illumination source is detected by the detector, distinguishing over Maekawa et al. Maekawa et al. teaches (among other things) the use of an LED source for causing scattering of light from particles to detect the presence of the particles ("monitoring" light source 16, as part of the "monitoring system"), along with a laser light source (the "exciting" light source 3) for causing fluorescence from the particles to be imaged (as part of the "image capturing" system).

Figure 8 of Maekawa et al. shows how this works. In Figure 8A, the monitoring system detects the presence of scattered light from particles, resulting from the CW monitoring light source 16. After signal processing, Figure 8D shows the gate control signal resulting from the monitoring system which turns on the transmission light image capture system and exciting light source 3, to image the particle.

There are two mentions of an LED as a light source in Maekawa et al., and in both cases the LED acts as the separate monitoring illumination source in the

monitoring system. The monitoring system has a CW light source, which causes light to scatter off of particles in the flow and be detected by a detector.

The first mention of an LED is in the Summary, at column 5, lines 11-13, “[t]he monitoring light source may be a CW emission type light source such as a LD, LED, SLD, or the like.”

The second mention of the LED is at column 10, lines 2-3 and lines 11-12: “numeral 16 denotes a cell passage monitoring light source . . . The light source 16 is a CW emission type light source such as an LD, LED or SLD.”

The monitoring system only detects scattered light (see column 7, lines 33 and 42-46; column 9, lines 56-57; column 12, lines 46-51; column 12, line 62-column 13, line 45; column 41 – column 42, line 17, and column 19, lines 14-16).

Maekawa et al. also teaches an embodiment wherein the exciting light source also acts as the monitoring light source. See Figure 1 and associated description at column 7, lines 29-36. “No cell passage monitoring light source is provided, because passage of a cell is monitored using light originating from the exciting light source 3. However in this case the light source is not an LED. Light source 3 “is a CW emission type light source and, more specifically, a laser light emitting device capable of producing CW laser light” (column 6, lines 59-61).

New Claims

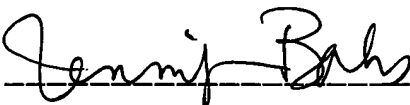
Claims 21-26 have been added to emphasize that the present invention both detects the presence of particles and measures some property of the particles, both as a result of the LED illumination source. Maekawa et al., by contrast, either used an LED to detect the presence of particles and then used a laser to image the particles, or else used a laser for both purposes.

Conclusion

As the use of an LED source resulting in fluorescent light emitted from the particles for particle detection is not taught or suggested by cited or known prior art, applicant submits that the claims as amended, and the new claims, are patentable. The dependent claims are patentable as depending from patentable claims, and include further patentable elements.

As all of the claims now in the application appear to be in condition for allowance, applicant respectfully requests that the application be allowed and passed to issue as soon as possible.

Respectfully submitted,
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